

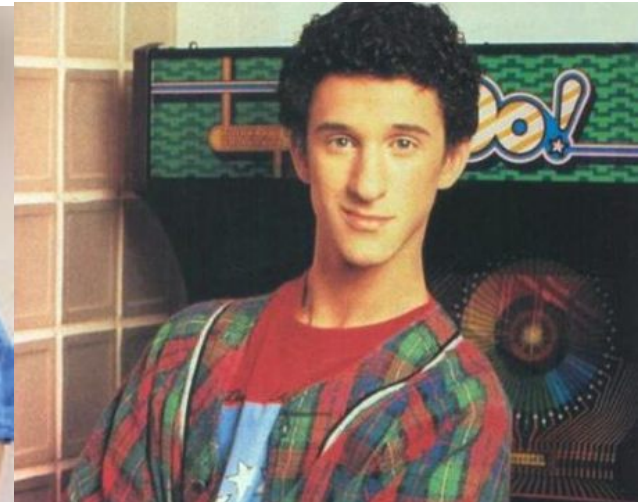
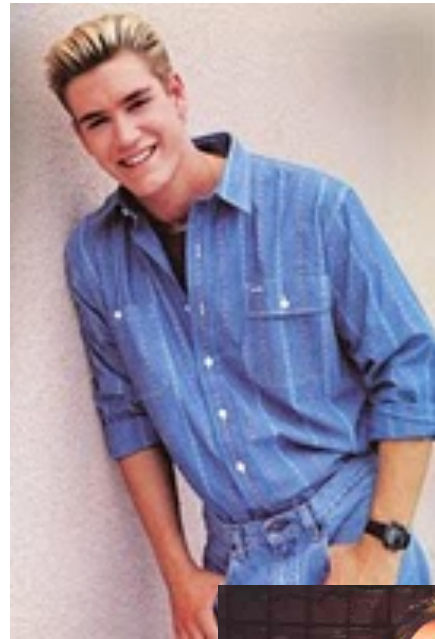
Thinking



What is thought?

Our concept of men may include all of the following guys....

We think in... **Concepts** (schemas)...that are based on **prototypes** because we have to simplify our lives.



The concept is based on our prototype (ideal) male.....



Schema Adjustment



dreamstime



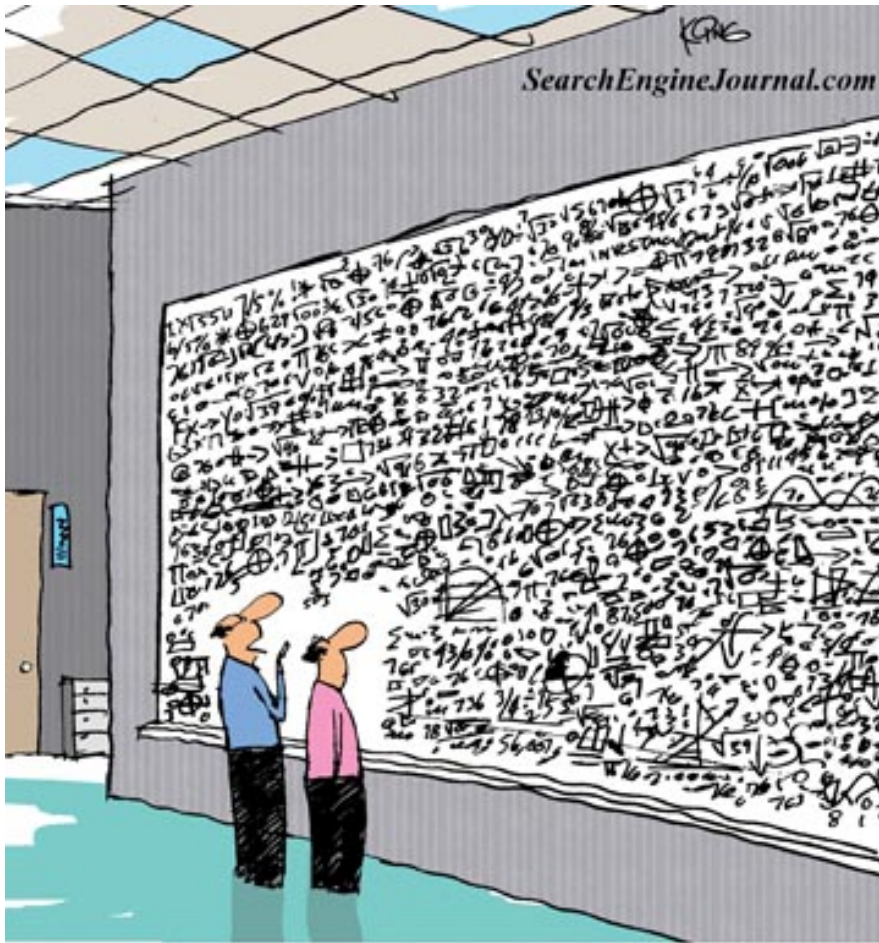
- As we learn new info, we either assimilate it or accommodate it.
- **Assimilate** = put new info into existing category
- **Accommodate** = change or adapt a category to suit the new info
- stereotypes

Problem Solving

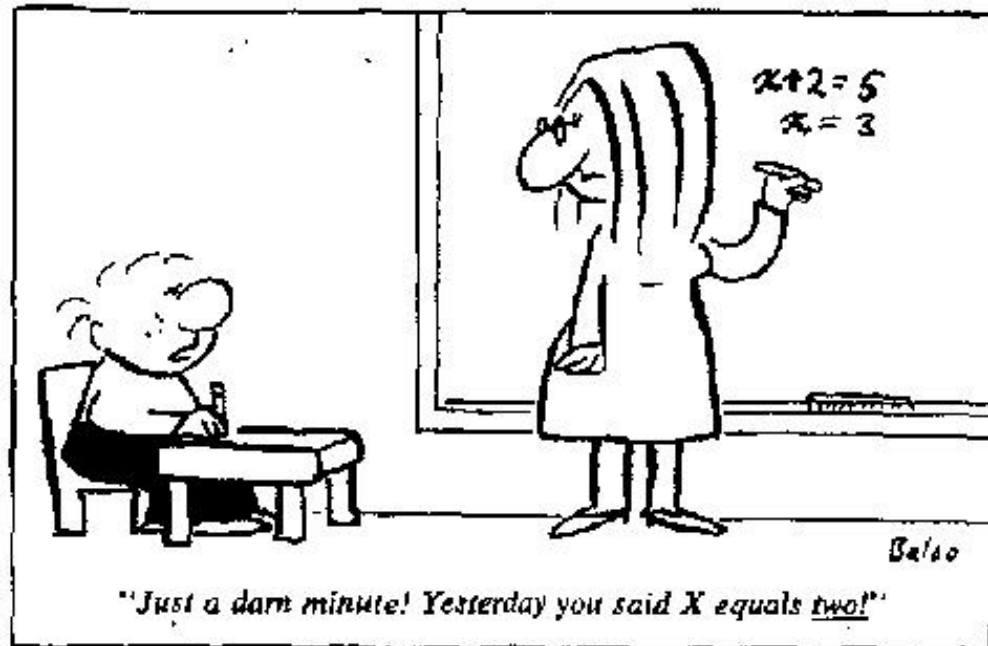


Algorithms

- A rule that guarantees the right solution to a problem.
- Usually by using a formula.
- They work but are sometimes impractical.

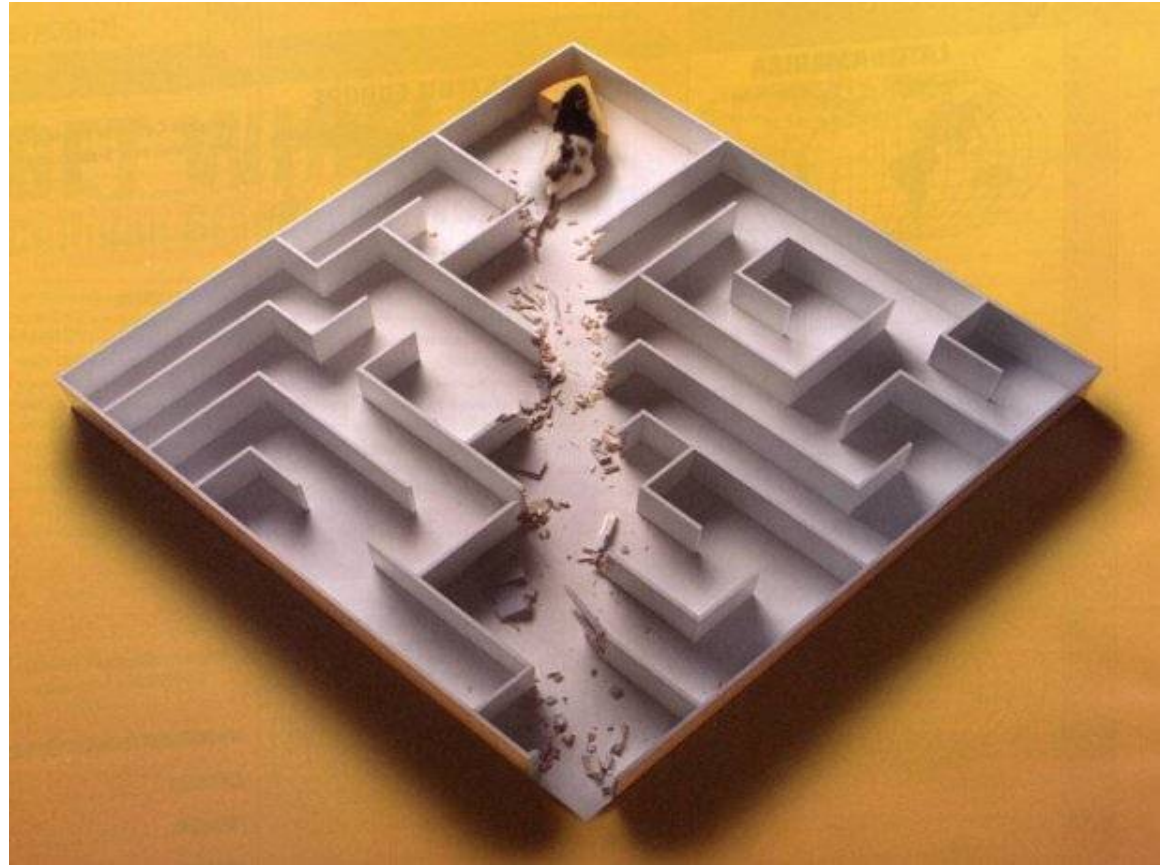


...And that, in simple terms, is how you increase your ranking on search engines."



Heuristics

ex: Buying a rug for a dorm room.
Eyeball it or measure it.



“i before e except after c.”

- A rule of thumb that generally, but not always, can be used to make a judgment to solve a problem.
- Simple thinking strategy
- It is fast, but is...
- Prone to errors
- Two major types of heuristics....

Representativeness Heuristic

Who went to Harvard?



- When we judge the likelihood of category membership by how closely an object or event resembles a particular prototype.
- Like thinking everyone from GAC is preppy, or someone with glasses is nerdy, or a blonde is not smart.

Availability Heuristic

- Our tendency to judge the likelihood of an event on the basis of how readily we can remember instances of its occurrence
- Vivid examples in the news often cause an availability heuristic.



In which place would you be more afraid of getting mugged or murdered?

When you think of crime, which town comes to mind?

Which one will (probably) cause you to take action about a hunger problem? Why?

- Approximately 147 million children worldwide who have lost one or both parents.
- Approximately 88 million orphans live in Asia.
- Approximately 45 million orphans live in Africa.
- Approximately 14 million orphans live in Latin America & the Caribbean.
- Approximately 1 million children live in public care in Central & Eastern Europe
- More than 800,000 children pass through America's foster care system each year.

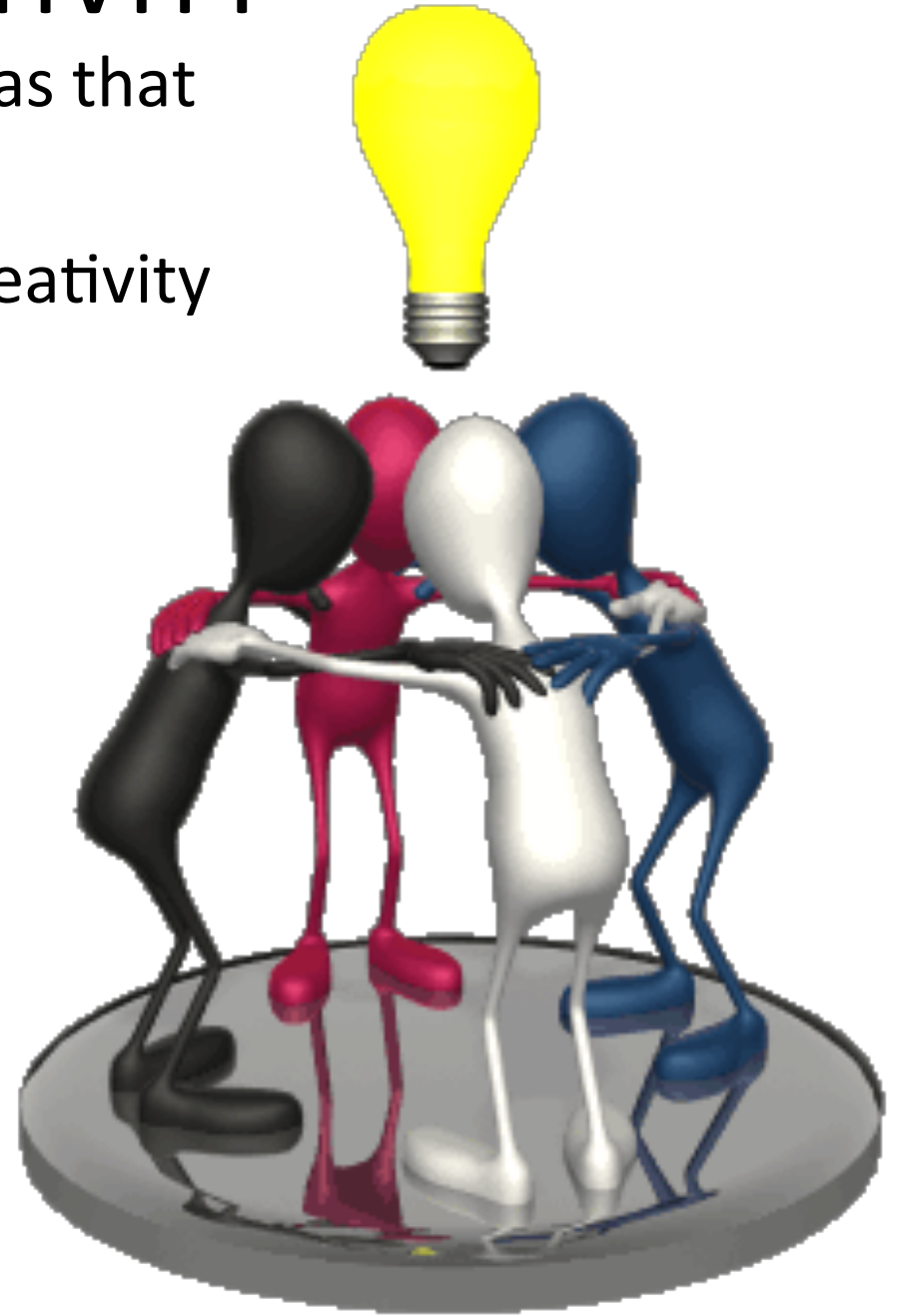


Musoke recovers from severe acute malnutrition and tuberculosis.

<http://www.kissesfromkatie.blogspot.com>

CREATIVITY

- The ability to create new ideas that are both novel & valuable
- Little correlation between creativity and intelligence.
- **Convergent Thinking** versus **Divergent Thinking**



Creativity



Need:

1. Expertise
2. Imagination
3. Adventurous personality
4. Intrinsic motivation
5. Creative Environment

- *Apollo 13* shows:
- The need to break one's functional fixedness about exactly what an object is and could be
- Convergent thinking because the ultimate goal here was to create a piece of equipment that would serve a specific purpose



Divergent thinking



Divergent thinking





Hurdles to problem solving



Heuristics can lead to Overconfidence...

- Our confidence is not a good indicator of how right we are.
- **Belief Perseverance**- maintaining a belief even after it has been proven wrong.
- **Belief Bias**- tendency for preexisting opinions to distort our sense of whether a particular conclusion is logically valid. (if it's consistent with our opinion, we think it's valid... even if it's illogical)



OVERCONFIDENCE

This is going to end in disaster, and you have no one to blame but yourself.

DIY.DESPAIR.COM

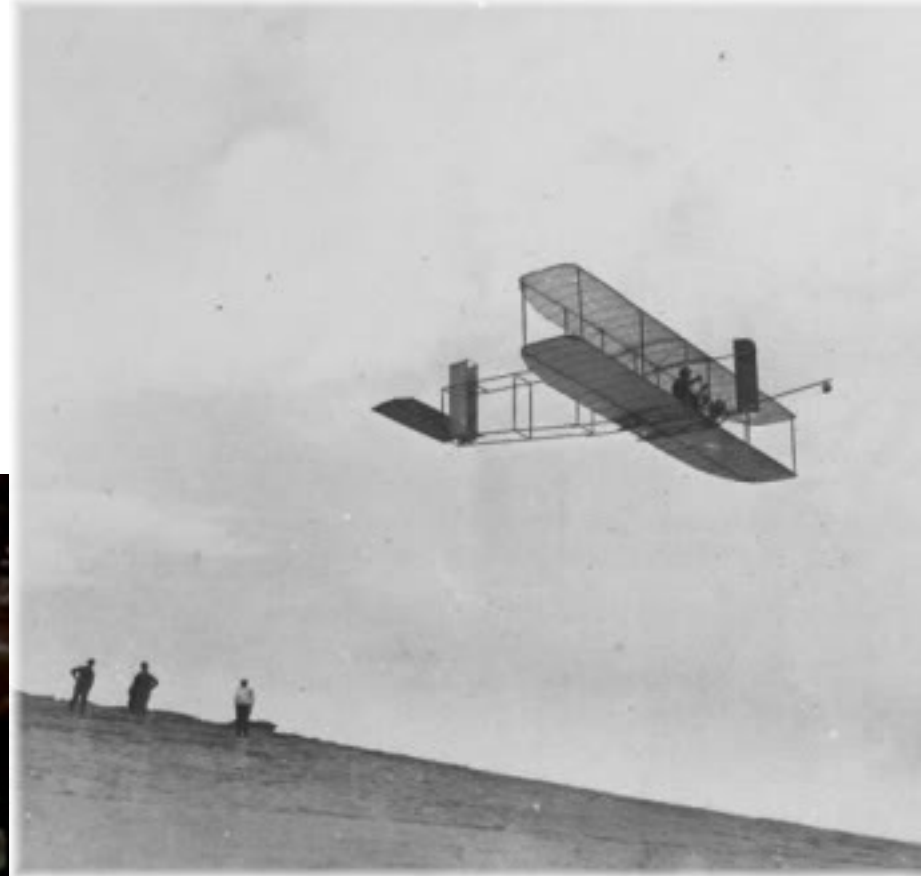
Overconfidence – tend to be more confident than correct.

Remember Groupthink?

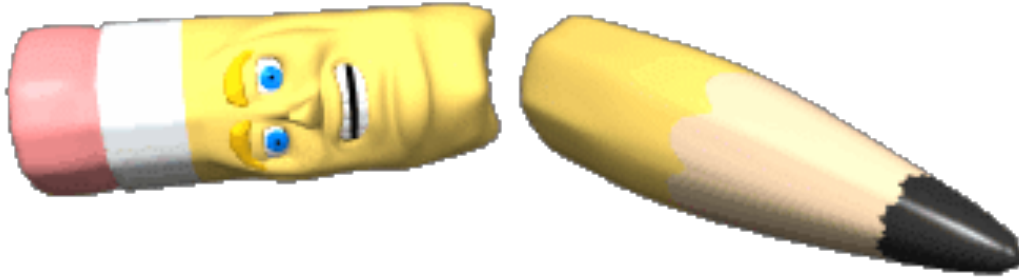


One kind of fixation is a **Mental Set**

- a.k.a. rigidity
- The tendency to approach a problem the same way we did last time.
- Some examples are....



The other kind of fixation is **Functional Fixedness**



- The inability to see a new use for an object.
- See only the normal use.

Think of as many uses as you can for a



MACGYVER

All he needed was a ball-point pen and a paper clip.

Confirmation Bias

- We look for evidence to confirm our beliefs and ignore evidence that contradicts them.
- For example, if one believes that all Italians are in shape and go tanning, then they turn on MTV.
- I hate _____, so I notice all the instances in which _____ exhibit “bad” behavior.



“Look...I knew it was true!!!” (But is it REALLY?)



Framing

- **90% of the population will be saved with this medication.....or**
- *10% of the population will die despite this medication.*
- **You should not drink more than two drinks per day....or**
- *You should not drink more than 730 drinks a year.*

Look at the following question and think about how the question is worded may affect the way it is answered.

- How can businesses become more socially responsible?

- The way a problem is presented can drastically affect the way we view it.



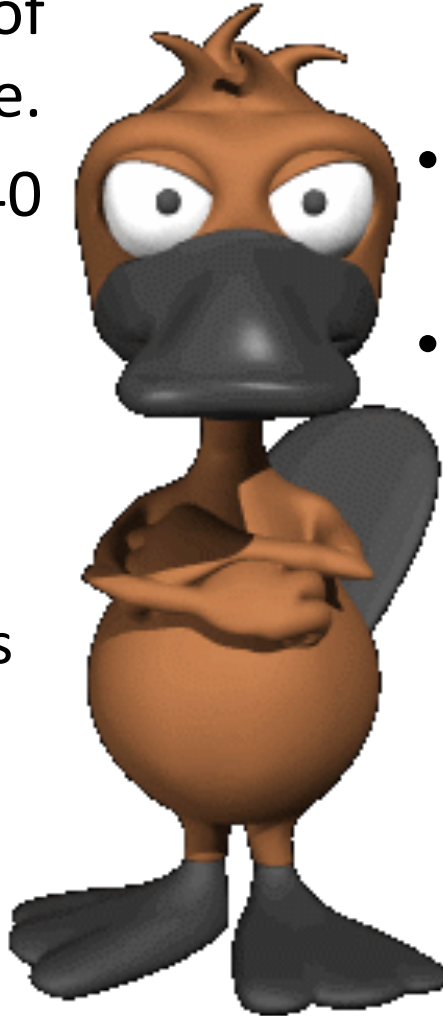
All languages contain....

Phonemes

- The smallest units of sound in a language.
- English has about 40 phonemes.

How many phonemes does platypus have?

How many morphemes?



Morphemes

- The smallest unit of meaningful sound.
- Can be words like *a*, *cat*, *eye*, or *but*.
- Can also be roots, prefixes or suffixes...
 - “ed” at the end of a word means past
 - “ly” means adverb
 - “s” means plural.

What morphemes can you add to the word “read”?

The underlined sounds in each pair of words may look the same, but they are different. Can you detect the differences?

- apple/apply
- bath/bathe
- heal/health
- cats/dogs
- thin/then
- pat/bat
- pot/spot
- tar/star
- cat/scat



How are the underlined sounds different in these pairs?

- sink/zinc
- chin/gin

The following words may be pronounced differently by English speakers.

third

yard

pen

creek

cot

time

hog

wash

orange

right

caught

aunt

The shark is ready to eat.
They were hunting dogs.
She's a German language teacher.



- **Grammar:** the rules of a language.
- **Syntax:** the order of words in a language.
- **Semantics:** The meaning of a word, phrase, sentence, or text

Is this the White House or the House White?

Semantically Empty Sentences

- On a Sears hair dryer: “Do not use while sleeping.”
- On a bag of Fritos: “You could be a winner! No purchase necessary. Details inside.”
- On a bar of Dial soap: “Directions: Use like regular soap.”
- On a hotel-provided shower cap in a box: “Fits one head.”
- On Marks & Spencer bread pudding: “Product will be hot after heating.”
- On packaging for a Rowenta Iron: “Do not iron clothes on body.”
- On Boot’s children’s cough medicine: “Do not drive car or operate machinery.”
- On Nytol, a sleeping aid: “Warning: may cause drowsiness.”
- On a string of Christmas lights: “For indoor or outdoor use only.”
- On an airline packet of nuts: “Instructions: open packet, eat nuts.”
- On many promotional offers: “Void where prohibited.”
- On Knorr’s soup mix packet: “To prepare with lowfat milk. Prepare as directed above using lowfat milk.”

Language Acquisition

Stages that we learn language...

1. Babbling Stage
2. Holophrastic, one word Stage
3. Two-Word, Telegraphic Speech Stage

After the telegraphic stage we get *overgeneralization*.



How does a child learn language?



- Child memorizes sentences?
- Child learns by uttering random strings and having only the correct ones reinforced?



- Innate programming?

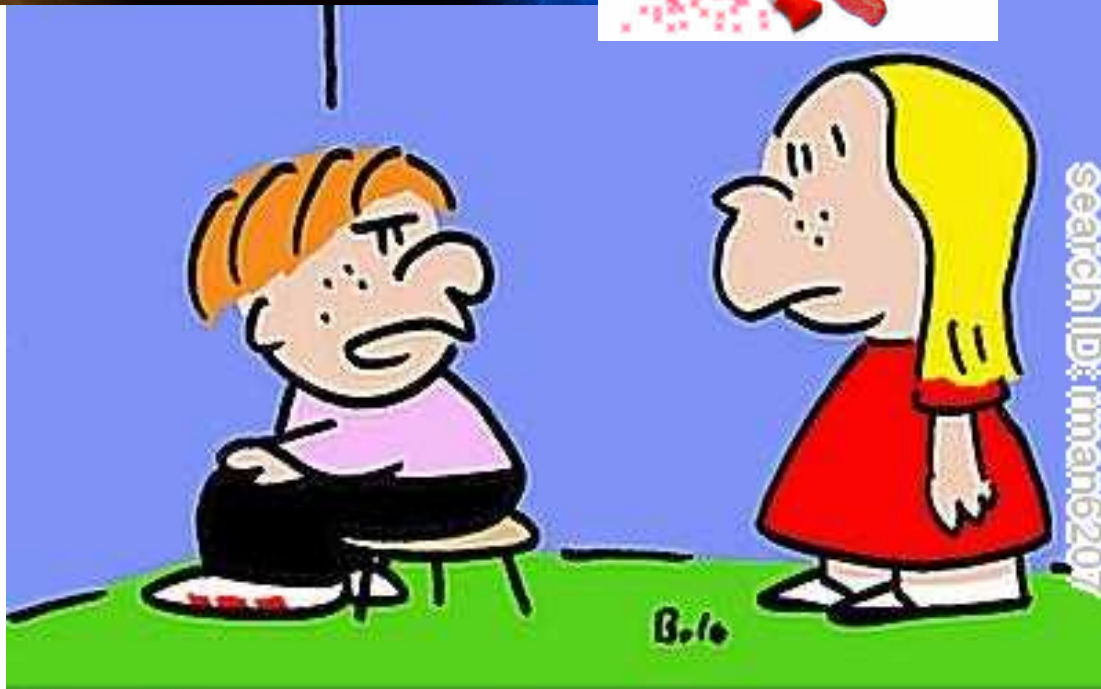




Social Learning Theory



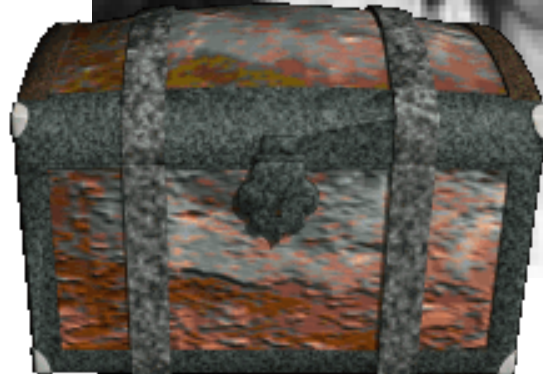
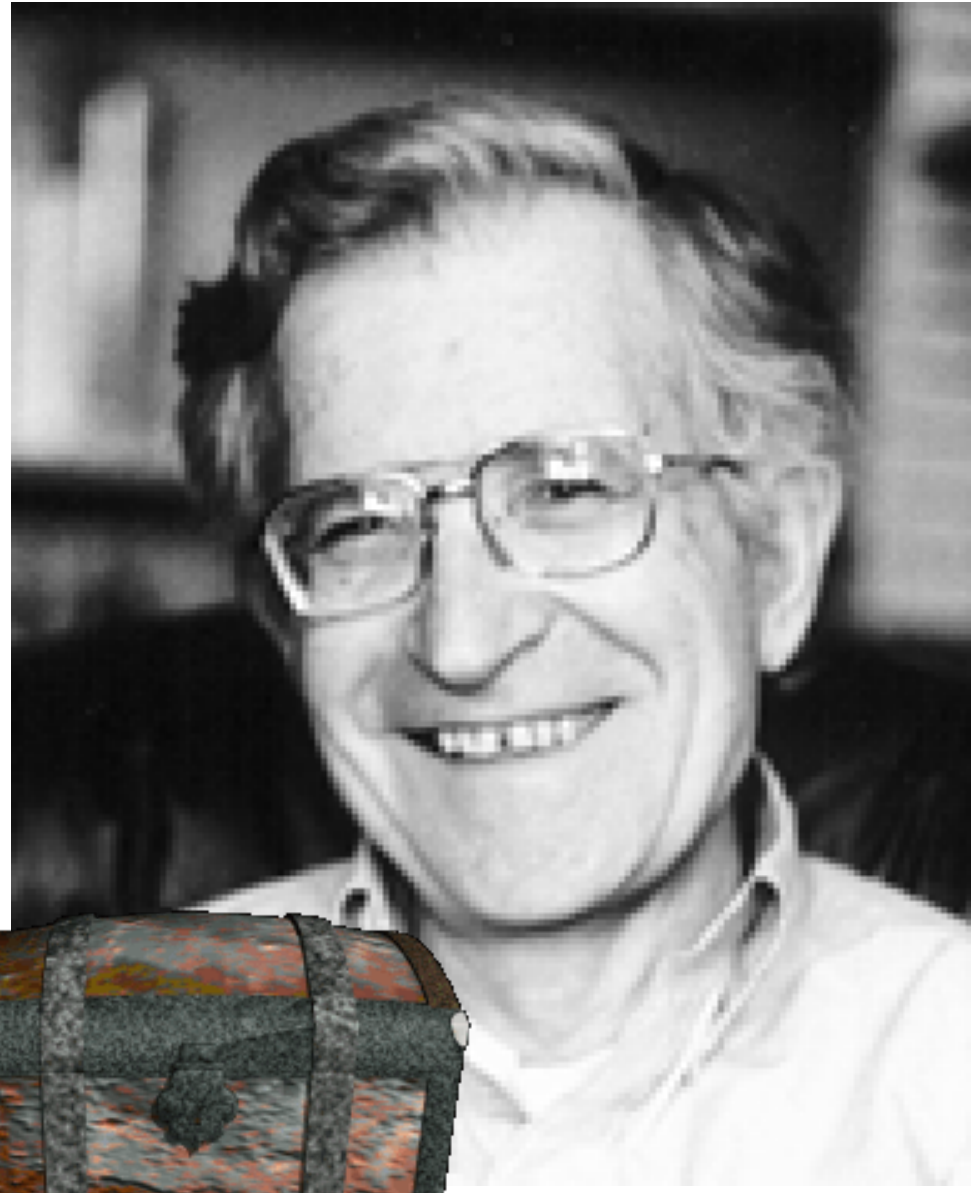
- B.F. Skinner from the Behaviorist School
- Baby imitates a parent.
- Reinforcement leads to repetition.
- Punishment leads to extinction.



"It sure didn't pay to increase my vocabulary *that time!*"

Chomsky's Theory (nativist theory)

- We learn language too quickly for it to be through reinforcement and punishment.
- **A nativist** assumes that some important aspects of children's *linguistic* knowledge are not acquired, but **innate** (present from birth and, for at least some researchers, encoded in the genome)



Chomsky's Theory (nativist theory)

- Inborn universal **language acquisition device** (preprogrammed or preorganized)
- Overgeneralization of verb tense
- new sentence construction
- parents speak imperfectly

John ate an apple

John ate.

(If something is missing in the sentence, we just understand what's missing.)

John is too stubborn to talk to Bill.

John is too stubborn to talk to.

(No one has to explain these complexities to us.)

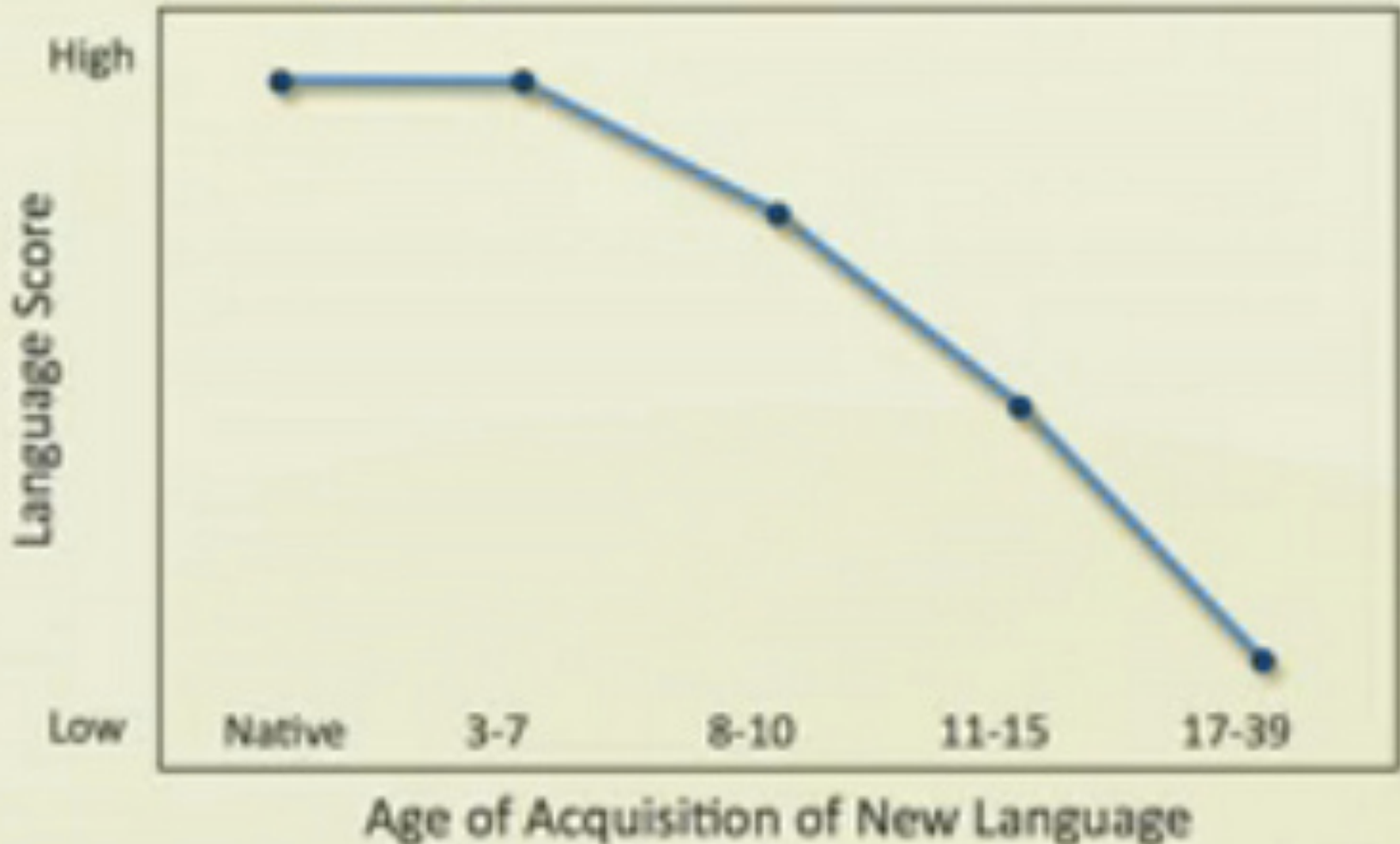


Critical Period

- The hypothesis that (1) the first few years of life are the crucial time for individuals to acquire a first language and that (2) after a certain age (7 years old) language learning is more and more difficult.
- Evidence for the hypothesis:
 - (1) The existence of feral children who couldn't learn to speak after being deprived of early linguistic input.
 - (2) Adults are more likely to suffer permanent language impairment from brain damage than are children because the latter's brains can adapt to the changes.

“They Should Learn Our Language.”

Language Exhibits a ‘Critical Period’



Genie

In Genie's phonological system:

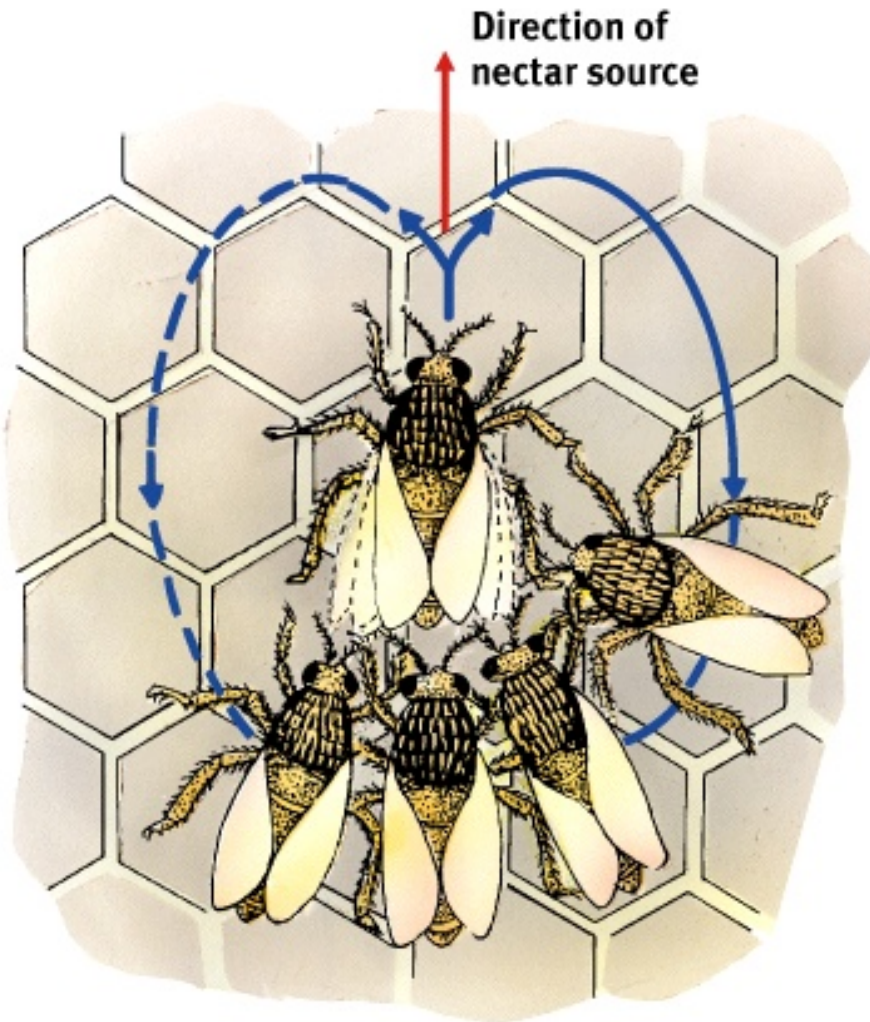
- rules are optional
- many substitutions and deletions make Genie's speech almost impossible to understand
- her substitutions are not random
- Vowels are not substituted for consonants and consonants are not substituted for vowels
- she cannot understand most grammatical rules
- “Applesauce buy store,” rather than, “We need to buy applesauce at the store.”

Whorf's Linguistic Relativity

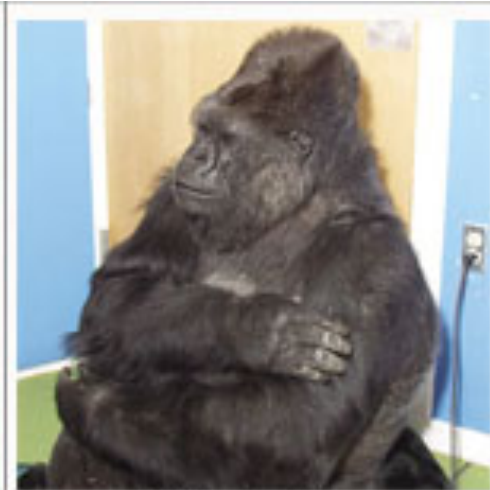


- The theory that language determines how we think.
- If you don't have a word for it, can you think about it?
- The Hopi tribe has no past tense in their language.
- The lexicon might exert a causal influence on:
 - aspects of visual perception (which colors we discriminate)
 - classification (how we sort things by their color)
 - long-term memory (color differences we remember)

Do animals use language?



"Koko-Love"



"Baby"



"Gorilla"



"Good"

Mental Practice

Pianist from China

Basketball players & free throws

Process Simulation



YOUR TRAINING CALENDAR

If you are using a Hal Higdon training program, you can generate an iCal file to import into Google Calendar, Outlook, iCal, etc. Just answer the questions below.

1. I am running a
 - ...5K
 - ...10K
 - ...half marathon

Outcome Simulation



GUNNAR FREYR
PHOTOGRAPHY

